

CLAIM AMENDMENTS

1. (Currently Amended) A vane system for a centrifugal compressor (10), ~~characterized in that it comprises~~ comprising two rows (15, 20) of vanes (15', 20') installed in series inside a suction duct (14), ~~the a~~ a first row (15) of fixed vanes (15') being suitable for homogenizing ~~the a~~ a gas flow passing through them and sending it to a second row (20) of adjustable vanes (20'), said second row being equipped with a guiding mechanism comprising a mechanical system (30) suitable for varying ~~the an~~ an orientation of the vanes (20'), the mechanical system including a connection of each adjustable vane of the second row to a shaft by a first leverage suitable for receiving a rotation imparted by an actuator, each adjustable vane being connected, through a respective foot produced in the form of a shaft, to the first leverage, in turn connected by a first rotating ring pin, to a disk which receives rotational movement induced by the shaft, and the first leverage comprises a lever fixed at one end to said foot of the adjustable vane and hinged at the other end to a tie rod by a second rotating ring pin.

2. (Currently Amended) The vane system according to claim 1, wherein said first row (15) of fixed vanes (15') is fixed by ~~means of roots (16) to the a~~ means of roots (16) to the a structure (17) of the diffuser, in turn connected to ~~the a~~ a terminal portion (18') of ~~the a~~ a compressor box (18).

3. (Currently Amended) The vane system according to claim 1, wherein the second row (20) of adjustable vanes (20') equipped with the mechanical system (30), is activated by ~~an a~~ a pneumatic actuator (70), ~~preferably of the pneumatic type~~, suitable for varying the orientation of the vanes so as to vary ~~the an~~ an incidence angle on ~~the a~~ a rotor, thus modifying ~~the a~~ a flow gradient and discharge pressure.

4. (Cancelled).

5. (Cancelled).

6. (Cancelled).

7. (Currently Amended) The vane system according to claim ~~6~~1, wherein said tie rod ~~(55)~~ is, in turn, hinged to the disk ~~(53)~~ to receive the rotational movement of the shaft ~~(33)~~.
8. (Currently Amended) The vane system according to claim 7, wherein said shaft ~~(33)~~ is connected to said disk ~~(53)~~ by ~~means of a second leverage (84)~~.
9. (Currently Amended) The vane system according to claim ~~[[4]]~~1, wherein said shaft ~~(33)~~ is equipped with a thrust rim ~~(34)~~ which rests on bushings ~~(38)~~ coated with antifriction treatment.
10. (Currently Amended) The vane system according to claim ~~[[4]]~~8, wherein said shaft is divided into two portions, a first portion ~~(33')~~ towards the vanes, and a second portion ~~(33'')~~ outwards, connected by ~~means of the a joint (57)~~.
11. (Currently Amended) The vane system according to claim 10, wherein a ring ~~(41)~~ is positioned at the end of the first portion ~~(33')~~ of said shaft ~~(33)~~, close to the joint ~~(57)~~, equipped with Teflon washers ~~(37)~~, energized with a spring to retain ~~the a~~ process gas inside ~~the a~~ compressor box (18), and a further ring ~~(41)~~, equipped with o-ring washers ~~(36)~~, is situated downstream, to retain ~~the~~ lubricant vapors ~~(40)~~ present.
12. (Currently Amended) The vane system according to claim ~~[[4]]~~1, wherein the shaft ~~(33)~~ is also equipped with at least one sealing ring ~~(44)~~ which serves to keep ~~the~~ dirty particles and sludge out of ~~the a~~ compressor box (18).
13. (Currently Amended) The vane system according to claim ~~[[4]]~~1, wherein there is also a spiral coil ~~(39)~~ which envelops the shaft body ~~(33)~~ to keep it in a stand-by position, and which rests on a retention body ~~(35)~~ which rubs against the shaft itself, with ~~the an~~ interposition of antifriction bushings ~~(38)~~.
14. (Currently Amended) The vane system according to claim ~~[[4]]~~10, wherein the end of the second portion ~~(33'')~~ of the shaft ~~(33)~~ which protrudes outside ~~the a~~ compressor box (18) is connected to an actuation and control system ~~(60)~~ comprising the actuator ~~(70)~~ which transmits rotation upon command, a third leverage ~~(61)~~ substantially similar to the first and the second two leverages ~~(51, 81)~~ and a reading system of the inclination angle of the vanes ~~(20')~~.

15. (Currently Amended) The vane system according to claim 14, wherein the reading of the inclination angle of orientation ~~imparted to the vanes (20¹) of the second row (20)~~ is effected by ~~means of a reference index (63) fixed to the third leverage (64) and which cooperates with a graduated label (42) fixed, for example, to the ring (41).~~